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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/842,973	04/26/2001	Zafer Sahinoglu		1250

7590 08/16/2005

Patent Department
Mitsubishi Electronic
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EXAMINER	
RYMAN, DANIEL J	
ART UNIT	**PAPER NUMBER**
2665	

DATE MAILED: 08/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/842,973	SAHINOGLU ET AL.	
	Examiner	Art Unit	
	Daniel J. Ryman	2665	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 April 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-12* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-12* is/are rejected.

7)☒ Claim(s) *1 and 5* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *26 April 2001* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *4/26/01*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: ref. 302, 400-402, 503, 901, and 1031-1037. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Information Disclosure Statement

2. The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609 A(1) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered. The references listed on page 1, lines 14-19; page 2, line 26-page 3, line 16; page 4, lines 7-19; and page 13, lines 11-23 should be placed in an IDS.

Specification

3. The disclosure is objected to because of the following informalities: on page 2, line 17 "use the" should be "use of the"; on page 5, line 22 "predetermine" should be "predetermined"; on page 8, line 14 "We use" should be "we use"; and on page 19, line 14 "1103" should be "1203" in order to match Fig. 12.

Appropriate correction is required.

Claim Objections

4. Claim 1 is objected to because of the following informalities: in line 5 "predetermine" should be "predetermined". Appropriate correction is required.

5. Claim 5 is objected to because of the following informalities: in line 1 "predetermine" should be "predetermined". Appropriate correction is required.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

7. Claim 12 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Claim 12 discloses that "the traffic rate is increasing when all the energy is within a low frequency band." However, the specification discloses that "[i]f the elements of X show an increasing characteristic over time ... then the energy distribution in each frequency band increases from finest to a coarser scale, being

the lowest in the highest frequency region" (page. 14, lines 15-19). Since Examiner is unsure of the proper interpretation for the claim, Examiner will not examine the claim for the purposes of prior art rejections.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. Claims 1 and 4-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aweya et al. (USPN 6,584,111) in view of Jozawa et al. (USPN 5,311,310).

10. Regarding claim 1, Aweya discloses a method for dynamically allocating bandwidth to traffic having a variable data rate in a network (col. 6, lines 54-67; col. 7, lines 3-5; and col. 7, lines 62-66), comprising: measuring a data rate of the traffic received from the network during fixed length time intervals (col. 6, lines 54-67 and col. 13, lines 38-45); grouping a predetermined number of consecutive data rates into vectors (col. 8, line 53-65; col. 12, lines 20-27; and col. 13, lines 38-45) where the vector comprises a series of rate measurements for a discrete time period; applying a discrete wavelet transform to each vector to determine frequency bands for each vector (col. 11, lines 15-45); analyzing the frequency bands of each vector to determine an associated energy of the data rate (col. 13, lines 59-65); and allocating the bandwidth to the traffic according to the associated energy when the traffic is transmitted (col. 15, lines 20-29).

Aweya does not expressly disclose that the vectors are overlapping vectors; however, Aweya does disclose that wavelet transforms have problems with the values at the boundaries of the input sequence (col. 11, lines 56-62). Jozawa teaches, in a transform system, that overlapping structures helps to prevent distortion during transformation (col. 1, line 65-col. 2, line 6). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to have overlapping vectors in order to help prevent distortion during transformation.

11. Regarding claim 4, Aweya in view of Jozawa suggests that a clock sets time intervals Sum(impulse(t-nT)) at a clock rate of 1/T for a data counter (Aweya: col. 13, lines 38-45) where it is well known to use impulse functions as a clock.

12. Regarding claim 5, Aweya in view of Jozawa does not expressly disclose that the predetermined number of consecutive data rates are grouped into the overlapping vectors in a shift register of length eight; however, Aweya in view of Jozawa does disclose that a predetermined number of consecutive data rates are grouped together (Aweya: col. 8, line 53-65 and col. 13, lines 38-45). Examiner takes official notice that it is well known to store information in shift registers. It is generally considered to be within the ordinary skill in the art to adjust, vary, select, or optimize the numerical parameters or values of any system absent a showing of criticality in a particular recited value. The burden of showing criticality is on applicant. In re Mason, 87 F.2d 370, 32 USPQ 242 (CCPA 1937); Marconi Wireless Telegraph Co. v. U.S., 320 U.S. 1, 57 USPQ 471 (1943); In re Schneider, 148 F.2d 108, 65 USPQ 129 (CCPA 1945); In re Aller, 220 F.2d 454, 105 USPQ 233 (CCPA 1055); In re Saether, 492 F.2d 849, 181 USPQ 36 (CCPA 1974); In re Antonie, 559 F.2d 618, 195 USPQ 6 (CCPA 1977); In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). Since Aweya in view of Jozawa disclose that a

predetermined number of consecutive data rates are grouped together, it would have been obvious to one of ordinary skill in the art at the time of the invention to group together any number, including eight, absent a showing of criticality by Applicant.

13. Regarding claim 6, Aweya in view of Jozawa suggests that the discrete wavelet transform is performed by a Haar wavelet filter bank (Aweya: col. 9, lines 38-40 and col. 10, lines 32-56).

14. Regarding claim 7, Aweya in view of Jozawa discloses receiving buffer statistics and a minimum non-zero data rate as feedback while allocating the bandwidth (Aweya: Fig. 8 and col. 13, lines 38-50).

15. Regarding claim 8, incorporating the rejection of claim 5, Aweya in view of Jozawa suggests that each overlapping vector is in terms of Xk = [X(n-M+1) X(n-M+2) ... X(n)], where M is eight, and n is an instance in time (Aweya: col. 8, line 53-65; col. 12, lines 20-31; and col. 13, lines 38-45).

16. Regarding claim 9, Aweya in view of Jozawa implicitly discloses that an average data rate for M consecutive time intervals is Xk+1 = 1/2[X(n-M+1)+X(n-M+2) X(n-M+3)+X(n-M+4) ... X(n-1)+X(n)] at a time scale of k+1, and a difference of data rates between two consecutive time intervals is Yk+1 = 1/2[X(n-M+1)-X(n-M+2) X(n-M+3)-X(n-M+4) ... X(n-1)-X(n)] where n is a time instance, k is a time scale, and M is an integer.

Applicant never ties the limitations of claim 9 to the limitations of claim 1, since the claims 1 and 9 never define how the average data rate and the difference of data rates are used in the system. In claim 9, Applicant states that the average data rate is a first equation and that the difference of data rates is a second equation, where the each equation is the mathematical representation of its respective term. Aweya in view of Jozawa implicitly disclose the limitations

of claim 9, since "an average data rate for M consecutive time intervals" and "a difference of data rates between two consecutive time intervals" would be defined as given in claim 9 in any system.

17. Regarding claim 10, Aweya in view of Jozawa implicitly disclose that the associated energy is expressed as En[E1,n,[E2,n,...,[Ek,n] (Aweya: col. 11, lines 34-55) where the given expression is only a set of values.

18. Regarding claim 11, Aweya in view of Jozawa implicitly discloses that a sum of the energies in each frequency band is bounded by a total energy of the traffic (col. 11, lines 40-45). Since the system does not add energy to the frequency band, each frequency band, which is a portion of the incoming signal, cannot have more energy than the total energy of the incoming signal.

19. Claims 2 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aweya et al. (USPN 6,584,111) in view of Jozawa et al. (USPN 5,311,310) as applied to claim 1 above, and further in view of Duffield et al. (USPN 6,452,933).

20. Regarding claim 2, Aweya in view of Jozawa does not expressly disclose that the bandwidth is allocated in a weighted fair queuing process; however, Aweya in view of Jozawa does disclose that the bandwidth is allocated according to a process (Aweya: col. 7, line 60-col. 8, line 4). Duffield teaches, in a packet communication system, that weighted fair queuing is well known as a way to closely approximate an ideal fluid system (col. 1, lines 17-24 and col. 1, lines 54-56). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to allocate bandwidth in a weighted fair queuing process since this approximates an ideal fluid system.

21. Regarding claim 3, Aweya in view of Jozawa does not expressly disclose that the bandwidth is allocated in a quality-of-service management block of the network; however, Aweya in view of Jozawa does disclose that the bandwidth is allocated according to a process (Aweya: col. 7, line 60-col. 8, line 4). Duffield teaches, in a packet communication system, allocating bandwidth according to QoS guarantees (col. 1, lines 30-37) where it is implicit that this is done in order to ensure that each packet flow meets its quality requirements. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to allocate bandwidth in a quality-of-service management block of the network in order to ensure that each packet flow meets its quality requirements.

Conclusion

22. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Droz (UPSN 6,292,466) see entire document which pertains to traffic control based on wavelets. Bahl (USPN 6,519,004) see col. 8, lines 25-67 which discusses wavelets.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel J. Ryman whose telephone number is (571)272-3152. The examiner can normally be reached on Mon.-Fri. 7:00-4:30 with every other Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu can be reached on (571)272-3155. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DJR

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